WILDFIRE OCCURRENCE & INTENSITY BY SUBWATERSHED

The probability of current fire (wildfire) occurrence (FO) was developed at a subbasin scale. FO was classified at a subbasin (4th code HUC) scale using eight years (1985-1992) of interagency reported wildfire data (see Theme ID #685) summarized by Hartford (1995). To calculate the wildfire occurrence probability per million acres for a subbasin, the total number of wildfires for each subbasin over the eight year period was summed, the sum was divided by 8 to get an annual average for the subbasin, then the annual average was divided by the subbasin area and multiplied by 1,000,000. The probability distribution was then categorized into 6 classes: none, very low, low, moderate, high, and very high. The class allocation was divided equally among all 164 subbasins. The calculated subbasin FO class was then assigned to all subwatersheds (6th code HUCs) of the subbasin.

Current fire (wildfire) intensity (FI) was developed at a subwatershed scale using a weighted average of 1-square kilometer predicted fireline (wildfire) intensity values using the Fire and Fuels database (see Theme ID #863) summarized by Hardy and others (1996) in combination with current 1-square kilometer data on cover type, structural stage, and fire weather. The weighted averages of fireline intensity were categorized into three classes: low, moderate, and high. The three classes were based on an even allocation of subwatersheds to each class across all subwatersheds of the Basin.

The current fire (wildfire) occurrence/intensity risks (OCCUR_INTE) were developed at the subwatershed scale through a lookup table (see below) that classified the combinations of FO and FI into three classes: low, moderate, and high. Low (L) indicated those subwatersheds that had little risk of wildland wildfire events. A moderate (M) class indicated those subwatersheds that could have a lower-intensity wildfire event within the next several decades or a higher-intensity wildfire event sometime over many decades. A high (H) class indicated those subwatersheds with a relatively high probability of a higher-intensity wildfire event sometime within the next decade.

Limitations:
1) The FO data are current subbasin occurrence classes, so should not be used for any smaller geographic scale unless appropriately adjusted by another smaller scale variable (as done for OCCUR_INTE). Since the data are from a recent 8 year period that strongly reflects fire suppression and human ignition patterns, this variable should not be used as a proxy for any other time period.
2) The FI data are based on a model that does not account for influence of local ignition risk, terrain, or wind events. Thus it is only useful as a relative comparison between subwatersheds of the Basin for fuel associated potential wildfire intensity.
3) The OCCUR_INTE should only be used as a risk of occurrence of intense wildfire between subwatersheds of the Basin. However, since intensity is adjusted by current wildfire occurrence, the limitations of FI relative to ignition, terrain, and wind are reduced substantially.

Fire Intensity		Fire Occurrence						
Num	Num Class	0 N	1 VL	2 L	3 M	4 H	5 VH	
0	N	L	L	L	L	L	L	
1	VL	L	L	L	L	M	M	FI/OC Class Assignments
2	L	L	L	M	M	M	M	
3	M	L	L	M	M	H	H	
4	H	L	M	M	H	H	H	
5	VH	L	M	M	H	H	H	

Fire Intensity and Occurrence Classes
0 = N = Null
1 = VL = Very Low
2 = L = Low
3 = M = Moderate
4 = H = High
5 = VH = Very High

FI/OC Class Assignments
L = Low
M = Moderate
H = High